/17 cont./
and by Zerries for the Waiká (63).

63. Zerries, 1954b, p. 73.

411

3. War and Hunting Weapons and Accessories

For war and hunting expeditions the Surára and Pakidái, exactly like most of the other forest nomads of South America, use very large bows -- hâtonahî -- and arrows -- xerêka (Ill. 12).

[824] The bows, so-called simple bows because they consist of only one piece, are made out of the heavy black wood of the pupunha or chonta palm (Guilielma speciosa Mart.) and are between 2.03-2.12 meters long. Their tension-strength weight is 32 kilograms and the length of stretch 71 centimeters (64). As

64. Pertinent comparisons with bows of other South American tribes may be found in Ranke's chart (Ranke, 1903, p. 347).

the result of a not too marked, but uniform curvature, they have a symmetrical appearance. While the outer side is flat, the inner side is rounded, so that the cross-section, which in the center amounts to 2-2 1/2 centimeters, appears semicircular. The two ends come to a point (Fig. 2 i).

411 With regard to their construction it may be said that now-
412 adays the bow-staff is first roughly shaped with ax and tercado
322 (large bush-knife (65). (I did not find any stone axes, which

[439]

65. They obtain these objects by barter with piacabeiros (palm-fiber gatherers) and as gifts from the personnel of the Indian protection post Ajuricaba on the middle Demini.

[439] were perhaps once used in former times.) Subsequently the men shape them with a small knife, which they likewise obtain by barter.

Surára
Pukidái
Shiriana
Samatari

/17 cont./

411 barter. For smoothing, they use the inner edge of the eye-tooth
412 from the lower jaw of a wild pig and the rough leaves of the
322 curatella (Cecropia peltata), which gives the bow a beautiful,
237 shiny appearance.
824 The bowstring -- penahitâbe --, which consists of three
411 strands of curauá (Bromeliaceae) fiber strings twisted to the right,
283 is fastened to the bow ends with a simple knot. If one wants to tighten up the bow, the string must be twisted more, which makes it shorter.

411 The bow described may be immediately classified as one of
191 the typical bow-forms of Guiana, which Métraux characterizes as
114 follows: "Guiana bows were generally convex on the belly while the back or outer surface was concave or flat" /cited in English/ (66).

66. Métraux, 1949, p. 232.

According to Meyer's classification, on account of its semi-circular cross-section, it would /18/ belong to the North Brazilian bow-type; on the basis of the material, however, to the Peru group, because it is not the reddish-brown, smooth leguminous wood, but that of the pupunha palm (67). P. Schmidt also

67. Meyer, no date, p. 31.

devotes a rather long section to this "reverse form of the flat bow" and already lists the following tribes north of the Amazonas where it occurs: "Kanamare on the Rio Jurua, Trio, Ojana, Makusi, Wapisiana, Uaupe, Porokoto, Passe (child's bow), Siriana on the Rio /Fig. 2 appears here./ /19/ Uraricapara,
411 Motomoto" (68). On the basis of the descriptions and illustra-
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114

68. P. Schmidt, 1913, p. 1030.

tions of the Xiriâna bow which Koch-Grünberg gives (69), it is

69. Koch-Grünberg, 1923a, p. 311 and Pl. 47 (1 and 2a, b, c, d).

[Text continues on p. 39]

/26 cont./

283
[191]

122. (cont.)
in Guiana as well as in the Gran Chaco both thread twisted to the right and thread twisted to the left appear (Frödin and Nordenskiöld, 1918, p. 50).

[462] with which, however, a left twist is associated. The treatment of cotton -- xinarĩ -- , starting with picking, then drying and bleaching, removal of the seeds, loosening and plucking apart, up to the spinning, is women's work.

The spindle -- xinarikã -- consists of a smoothed stick -- ruhũ -- 30-35 centimeters long, for which the rib of a palm leaf is also often used, on the upper end of which a small barb -- nhobanã -- of the same material is attached with a cotton thread. [321] The disk-shaped whorl -- tankarã -- , made by the men out of bone [322] or wood, is slipped onto the stick from below and rests in the center of it. [462] To prevent it from slipping off when the woman holds her spindle in a vertical position, there is a wrapping of cotton below the whorl.

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From the description it may be seen that this is a typical Guianese variation of the "Bakaĩrĩ /Bacairi/ spindle." "Only in Guiana and on the Amazon River," Frödin and Nordenskiöld write in their study, "Uber Zwirnen und Spinnen bei den Indianern Südamerikas /On Twining and Spinning among the Indians of South America/, "do we find the spindles provided with barbs, which, however, differ from the other Bakaĩrĩ spindles only in that the spindle whorl rests near the center of the stick (Fig. 40)" (123).

123. Frödin and Nordenskiöld, 1918, p. 24.

In two other respects, however, the spindles of the Surára and Pakidái differ somewhat, for among them the stick is not thickened at the bottom, and the whorl is held by a wrapping of cotton.

4 Wilbert--75 E-4, 5 (1958) 1963 SQ18 Yanoama SQ18
Sanema

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322
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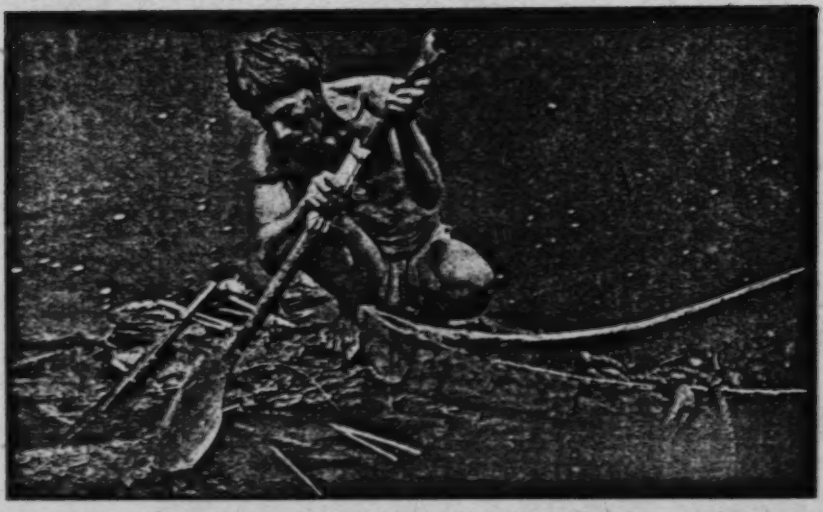
[237]

Sanemá Indian of the upper Ventuari preparing the shaft of an arrow, using a typical "knife" made out of a rodent's tooth mounted on a small stick.

6: Vinci T-5 (1950) 1959 SQ18 Yanoama SQ18
Sanema

● 322
291
142
516



18. *Poncho makes his oars at home: the final smoothing stage.*

226
* 123

19. *Enrico and Pedro make a good catch in the Mavi.*

[p. 96 – F]

/456 cont./

Preparation of Basic Materials

411 321 The Guaika /Waica/ make their arrow points out of bone. When they obtain a small piece of bone, they quickly transform it into a good arrow-point for killing birds. The long bones of legs and arms of monkeys are broken, and the sharp points which generally result have a form similar to that of arrowheads, are worked and finished, with the rest being thrown away. To give them shape, the points are scraped with knives or machetes and rubbed on some stone.

534 321 I also saw a whistle or a flute which seemed to be made out of bone or out of a quill of large size.

411 322 [824] [239] [412] The Guaika make their bows out of wood. They generally select the wood of the "pijiguao" palm. They give it a rough shape, using the machete. They achieve the final form by scraping the piece with the jawbone of a wild pig, the teeth constituting the cutting edges.

322 412 [239] They do wood carving with a small knife, which consists of the tooth of a rodent. With this tooth they manage the fine work of putting notches in the arrows. They also shape bamboo arrow-points and the oblong lower part of the apparatus for making fire.

They devote as much as half a day to carving the handles for their axes and machetes. They use the machete to shape them.

323 The Guaika make their pots of mud. The clay is obtained in specific places. This frequently requires a day or more of travel. Once the clay has been brought to the settlement, /457/ they go about extracting the stones from it while kneading it, moistened, for several hours. The pot is begun by taking a ball of mud which is given the shape of a bowl. Then they go on adding rings of mud which they join to the pot. The vessel is scraped and shaped with a piece of broken totuma /fruit of the calabash tree/. During the process of the scraping, they go on increasing the size of the pot. They keep the clay damp and plastic, spitting on it from time to time. After this they put the pot out to dry in the sun and finally bake it in the fire. The vessel comes out of

11: Chagnon E-5 (1964-1968) 1968 SQ18 Yanoama SQ18

276 [412] powder as it dries, the flat side of a stone axe[8] serving as the grinding pestle. The dried, green powder, no more than several tablespoons full, is then swept onto a leaf with a stiff feather. The men then gather around the leaf containing the drug, usually in the late afternoon, and take it by blowing the powder into each other's nostrils (see Fig. 2-3). A small quantity of the powder is introduced into the end of a hollow cane tube some 3 feet long. The tube is then flicked with the forefinger to scatter the powder along its length. One end of the tube is put into the nostril of the man taking the drug, and his helper then blows a strong blast of air through the other end, emitting his breath in such a fashion that he climaxes the delivery with a hard burst of air. Both the recipient and the blower squat on their haunches to do this. The man who had the drug blown into his nostrils grimaces, groans, chokes, coughs, holds his head from the pain of the air blast, and duck-waddles off to some leaning post. He usually receives two doses of the drug, one in each nostril. The recipient usually vomits, gets watery eyes, and develops a runny nose. Much of the drug comes back out in the nasal mucus that begins to run freely after the drug has been administered. Within minutes after the drug has been blown into a man's nose, he begins having difficulties focusing his eyes and starts to act intoxicated. The drug allegedly produces colored visions, especially around the periphery [187] of the visual field, and permits the user to enter into contact with his particular *hekura*, miniature demons that dwell under rocks and on mountains. The man begins to chant to the *hekura* when the drug takes effect, inviting them to come and live in his chest.

245 276 The Yąnomamö also cultivate a tree, *bisiowa*, that produces hallucinogenic seeds. These are prepared in exactly the same manner as the noncultivated drug.

322 396 TROUGHS AND CANOES The Yąnomamö use the bark of another kind of tree to make a trough and a crude canoe, both of which are nearly identical in shape, size, and method of construction. The tree is beaten with clubs to loosen the bark. The bark is then removed in one piece and hauled back to the village. The ends are heated in a fire to make them pliable and folded back to make the ends of the container. They are held firm by lashing two sticks together, pinching the folded bark into a flat-nosed basin. The interior bark surface becomes the exterior surface of the soup container. If the container is to be used as a canoe, a crude framework of sticks is added to the inside, giving 501 it more stability. The craft is so crude and heavy that the Yąnomamö generally do not use it for any purpose other than the trip for which it was intended, usually a downstream trip, since it would be almost impossible to move against a current in this rough craft. It is easier to walk than to try to pole the canoe upstream. The canoe, hence, is usually discarded after it makes its maiden voyage. Another will be made when it is needed.

415 574 264 The container is pinioned to the ground with stakes if it is to be used as a soup trough. Each time a feast is held, one or more of these bark containers is made in front of the headman's house, filled with the boiled ripe plantain soup, and frequented by the hungry guests, who dip out the soup with gourd spoons. The trough is thrown on the village rubbage heap after the feast is over.

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[172] [8] They find the stone axes when they make new gardens, explaining that the spirits left them behind for the Yąnomamö to use. This area was occupied in the distant past by tribes whose relationship to the present Yąnomamö is uncertain.

244 [777] [252] [999] Many of the Yąnomamö villages have recently obtained bitter manioc, a poisonous variety that must be leached of its toxic ingredient before it can be eaten. This variety is grown in large quantities by the Carib-speaking Makiritare Indians–and by rural Venezuelans–and most of it has been introduced to the Yąnomamö recently by missionaries. Where the Yąnomamö are in direct contact with the Makiritare, they have, of course, adopted the crop without the intervention of the missionaries.

Next in importance are three other root crops: taro, sweet potatoes, and mapuey. [252] All of these resemble potatoes; they are usually boiled, but occasionally they are roasted directly over the coals.

245 [423] The Yąnomamö also cultivate a species of palm tree that produces a large crop of fruit each February and a much smaller crop in June. Each tree is owned by the individual who planted it, and his rights to the fruit continue even after the garden has been abandoned. It takes about six or seven years for a newly planted tree to produce its first crop, so the Yąnomamö are quite reluctant to move very far away from sites where they possess producing groves of these trees. When they do move, they return each year to collect the peach-palm fruit. They try, as well, to move to an abandoned garden that still has producing peach palms. If thieves have been raiding the unguarded crop, the Yąnomamö may cut the trees down, keeping the wood to make bows. They would sooner destroy an item of personal property than permit others to exploit it without permission.

243 [262] Maize is probably next in importance, but in a special sense. It appears to be cultivated as an emergency crop because its seeds are light and easily transported. A group that must move its garden a long distance can carry large quantities of maize seed and produce a substantial crop in a relatively short period of time. Maize does not, however, under normal circumstances, figure prominently in the daily diet of the Yąnomamö.

Cane for arrow manufacturing is also grown. The mature plant consists of a long, slender, pithy cane that has no joints or branches and is ideally suited for arrow shafts. The Yąnomamö use the cane just as they harvest it. Their arrows are over 6 feet long. Wing feathers from the larger species of wild turkey are used to fletch the arrow. On [237] each side of the shaft, one feather is tied with finely spun cotton fibers, being attached in such a way that the arrow will spin when it is released; its accuracy is thus improved in the way a bullet's accuracy is improved by rifling in a gun barrel. A nock is carved [322] from wood with an agouti-tooth knife; it looks very much like a golf-ball tee when finished, except that it is grooved at the large end where it will be fitted to the bowstring. [314] [284] The nock is inserted in the narrow end of the cane and held fast with pitch adhesive and a tight wrapping of fine cotton thread. The large end of the cane is not altered if it is to take a curare tip, since it tapers to a fine point and, therefore, blends into the thin curare point. If the point to be mounted is of the lanceolate type, the tip of the cane is cut off at its maximum diameter, wrapped with heavy cord, and the point jammed into the cane pith with considerable force. The fiber wrapping prevents the cane from splitting while the point is being mounted. The finished product is a very handsome piece of work, and the Yąnomamö are proud of their arrows. They decorate the bamboo [531] points by painting them red and adding black designs, and they attach a few colorful feathers to the fletched end. A seasoned arrow is a prized possession, in high demand in [422] [431] the trading network.